

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
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)	
Update to Rural Broadband Report)	GN Docket No. 11-16
)	

COMMENTS

March 2, 2011

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The Wireless Communications Association International, Inc. (WCAI), the trade association of the wireless broadband industry, submits these comments on the Commission's Rural Broadband Report (RBR).¹

I. DISCUSSION

A. The Report Should Encourage Funding Wireless Networks in Rural Areas.

The American Recovery and Reinvestment Act directed the Commission to include, as part of the National Broadband Plan (NBP),² "an analysis of the most effective and efficient mechanisms for ensuring broadband access by all people of the United States."³ The Commission detailed its analysis of this question in its first technical paper supporting the NBP, OBI Technical Paper No. 1. In the paper, the Commission found that "[w]ireless solutions are among the lowest cost solutions and wireless costs grow less quickly as density falls."⁴ Although the paper disclaims choosing particular technologies for rural areas, it recognizes that "[t]o establish the \$23.5 billion gap, it is necessary to make a determination as to which last mile technology is likely to be least expensive given existing infrastructure, density, terrain and other factors."⁵ OBI Technical Paper No. 1 determined that wireless is the lowest cost technology for serving 90% of unserved households.⁶

¹ See Public Notice, DA 11-183 (rel. Jan. 31, 2011).

² See "Connecting America: The National Broadband Plan," Federal Communications Commission, 93 (March 2010).

³ American Recovery and Reinvestment Act of 2009, Pub.L. No. 111-5, § 6001(k)(2)(D), 123 Stat. 115, 516 (2009).

⁴ OBI Technical Paper No. 1 at p. 61.

⁵ OBI Technical Paper No. 1 at p. 10.

⁶ OBI Technical Paper No. 1 at p. 13, Exhibit 1-J.

Given that the Rural Broadband Report was issued before the NBP, and thus did not have the benefit of the Commission's "gap" analysis, the RBR does not contain an analysis of the most cost effective technologies for serving rural areas. Now that the "data is in," the RBR should expressly find that wireless is the best technology for most rural areas in the near-term. That finding would be consistent with the data in OBI Technical Report No. 1 and is the only finding supported by the data.

It is also supported by the real-world experience gained as a result of the implementation of the American Recovery and Reinvestment Act of 2009 (ARRA) (i.e., the economic stimulus act), which allocated \$7.2 billion to the National Telecommunications and Information Administration (NTIA) (\$4.7 billion) and the Rural Utilities Service (RUS) (\$2.5 billion) to provide broadband access to unserved and underserved areas. According to the Commission's analysis in OBI Technical Report No. 1, the \$7.2 billion in ARRA funding should have significantly closed the rural broadband gap. OBI Technical Paper No. 1 demonstrates that, using a combination of fixed wireless and DSL technologies, it would take approximately \$23.5 billion to extend broadband to homes that do not have access today (at speeds of 4 Mbps downstream and 1 Mbps upstream).⁷ Although that seems like a large number, "the highest-gap 250,000 housing units account for \$13.4 billion of the total \$23.5 billion investment gap."⁸ This means that nearly all unserved homes could be served with approximately \$10.1 billion – an amount that is similar to that made

⁷ OBI Technical Paper No. 1 at 2.

⁸ OBI Technical Paper No. 1 at 5.

available by the ARRA.⁹ The data demonstrates that, if NTIA and RUS had focused on the most cost-effective types of deployment envisioned by the FCC (fixed wireless and DSL), this country's broadband gap could have been largely closed.

Unfortunately, that's not what happened. Out of the approximately \$900 million in awards provided by RUS in its first funding round, RUS issued approximately 3 percent of the total funding to wireless projects. The vast majority of the funding was instead given to fiber projects. Rather than attempt to close the broadband gap by covering as many homes as possible, the agency's fiber awards virtually ensured that the broadband gap would persist for the foreseeable future. As a result, only a few rural consumers will receive broadband while the vast majority continues to be unserved. Although fiber everywhere may be an appropriate long-term goal, in the short-term, government policy should be biased toward ensuring that rural consumers have at least some form of broadband as quickly as possible. The focus on fiber in the implementation of the ARRA thus represents a substantial missed opportunity.

This update to the RBR presents another opportunity: An opportunity for the Commission to expressly recognize that wireless offers the best technology for ensuring that unserved households have access to broadband quickly and at the lowest cost. WCAI recognizes that the Commission has a long history of technological neutrality. That is wise policy in competitive environments in which the market chooses winners and losers. But many unserved areas are not capable of sustaining

⁹ Note that this number may need some adjustment due to the new data produced by the National Broadband Map. See <http://www.broadbandmap.gov/>.

even one provider without Universal Service Fund subsidies. As OBI Technical Report No. 1 recognized, to serve rural America, “it is necessary to make a determination as to which last mile technology is likely to be least expensive given existing infrastructure, density, terrain and other factors.”¹⁰ The answer to that question in remote areas is wireless.

B. The Report Should Encourage Low-Frequency Wireless Backhaul.

WCAI agrees with the Rural Broadband Report’s finding that “backhaul transport costs in rural areas can be significantly higher than for networks in other areas.”¹¹ WCAI also agrees that, “[b]ecause wireless infrastructure costs are frequently less significant than comparable wired broadband deployments, wireless broadband can be an efficient means of delivering both backhaul and “last-mile” access services in rural areas.”¹² But this finding regarding wireless backhaul should have gone further. The NBP noted that backhaul costs “constitute a significant portion of a cellular operator’s network operating expenses” and that in remote geographic areas wireless backhaul is the only practical solution.¹³ The RBR should reaffirm this finding – that low-frequency wireless backhaul is necessary to serve the most rural and remote areas of the country, including tribal lands.

Low frequency wireless backhaul is the most cost-effective and technically efficient solution in remote rural areas. Provisioning backhaul in remote rural areas is particularly difficult for both economic and technical reasons. Poor economic

¹⁰ OBI Technical Paper No. 1 at p. 10.

¹¹ RBR at ¶ 114.

¹² RBR at ¶ 142.

¹³ NBP at p. 93 (March 2010).

conditions – low population densities and low subscriber revenue levels – make wired backhaul (e.g., fiber) prohibitively expensive in many rural areas. Technical difficulties, including difficult terrain and a lack of existing infrastructure (i.e., pole attachments), also present unique challenges best solved by wireless backhaul solutions in lower frequencies than are currently available.

The TV white spaces are ideally suited as a solution that could dramatically lower the cost of providing mobile broadband and other wireless services in rural areas. Because suitable off-the-shelf equipment already exists, equipment costs will be much lower than other alternatives.¹⁴ The excellent propagation characteristics of the TV Bands spectrum means that longer distances can be covered with less infrastructure, thereby lowering costs even further. TV spectrum is also ideal because, in remote areas, there is sufficient TV spectrum available to provide robust wireless backhaul without compromising other important uses of the spectrum, such as incumbent television stations, unlicensed devices, and future mobile allocations. This makes wireless backhaul in the TV white spaces a win-win-win. The Rural Broadband Report should take advantage of this ideal solution and find that wireless backhaul in the TV white spaces is a necessary component of rural broadband networks.

II. CONCLUSION

WCAI supports the Commission's efforts to update its Rural Broadband Report to include the most recent data and findings. WCAI requests that the Commission

¹⁴ For example, Kathrein Scala offers a PR-TV series Parareflector antenna designed to operate on 6 MHz channels in the 470-862 MHz band. See <http://www.kathrein-scala.com/catalog/PR-TV.pdf>.

include in the updated Report findings (1) that, in the near-term, wireless is the best technology for most rural areas and (2) that low-frequency wireless backhaul is necessary to serve the most rural and remote areas of the country.

Respectfully submitted,

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